Contribution ID: **179** Type: **talk**

Search for Higgs boson decays to bottom quarks in the vector boson fusion production mode with the ATLAS detector

Monday, 12 July 2021 15:15 (15 minutes)

The Higgs Boson is expected to decay to bb approximately 58% of the time. Despite the large branching fraction, due to the large background from Standard Model events with b-jets, measuring this decay has been less precise than other, less frequent, decays. Measuring H(bb) in the vector boson fusion production mode has historically been insensitive, but developments in the background estimates and discrimination, as well as improvements in the signal extraction techniques, have resulted in an observed (expected) significance of 2.6 (2.8) standard deviations from the background-only hypothesis. This analysis uses a dataset with an integrated luminosity of 126 fb^{-1}, collected in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector at the Large Hadron Collider (LHC) during LHC Run 2 and considers only fully-hadronic final states. This talk will focus on the background estimation and signal extraction techniques that are unique to this analysis, as well as the results.

Are you are a member of the APS Division of Particles and Fields?

No

Primary author: KLEIN, Matthew Henry (University of Michigan (US))

Presenter: KLEIN, Matthew Henry (University of Michigan (US))

Session Classification: Higgs & Electroweak Physics

Track Classification: Higgs & Electroweak Physics